

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 July 2005 (28.07.2005)

PCT

(10) International Publication Number
WO 2005/069389 A1

(51) International Patent Classification⁷: H01L 33/00
(21) International Application Number:
PCT/KR2005/000150

(22) International Filing Date: 14 January 2005 (14.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10-2004-0002849 15 January 2004 (15.01.2004) KR

(71) Applicant (for all designated States except US): SEOUL
OPTO-DEVICE CO., LTD. [KR/KR]; 1 Block 36, 725-5,
Wonsi-Dong, Danwon-Gu, Ansan 425-851 (KR).

(72) Inventor: and

(75) Inventor/Applicant (for US only): LEE, Jong-Lam
[KR/KR]; B-1401, Professor Dormitory, 756, Jigok-Dong,
Nam-Gu, Pohang 790-390 (KR).

(74) Agent: NAM, Seung-Hee; 12F, Seo-Joon Bldg., 1330-9
Seocho-dong, Seocho-Gu, Seoul 137-858 (KR).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KR,
KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,
MK, MN, MW, MX, MY, NA, NI, NO, NZ, OM, PG, PH,
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

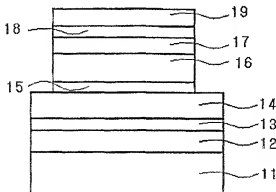
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, NG, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: GALLIUM NITRIDE-BASED III-V GROUP COMPOUND SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING THE SAME



(57) Abstract: The present invention relates to a gallium nitride-based compound semiconductor device and a method of manufacturing the same. According to the present invention, there is provided a gallium nitride-based II-V group compound semiconductor device comprising a gallium nitride-based semiconductor layer and an ohmic electrode layer formed on the gallium nitride-based semiconductor layer. The ohmic electrode layer comprises a contact metal layer, a reflective metal layer, and a diffusion barrier layer.